

## A NEW CLIFF-ROSE FROM ARIZONA

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It was noted in a recent publication<sup>1</sup> that an apparently undescribed *Cowania* occurs in western Arizona. The writer is now convinced that this plant merits recognition as a species.

*Cowania subintegra* sp. nov. Frutex parvus, ramulis adscendentibus-patentibus 30-75 cm. longis, cortice albo-griseo; folia nec viscida nec distincte glanduloso-punctata, integra vel nonnunquam apicem versus 1-2-dentata, usque ad 15 mm. longa et 3 mm. lata, spathulata, apice obtusa, basi attenuata, margine valde revoluta, supra laetevirentia et parce araneosa, subtus dense albo-lanata; ramuli, pedicelli, hypanthium, et calycis lobae tomentosi sine glandulis stipitatis; pedicelli 4-11 mm. longi hypanthium subaequantur vel valde superantes; hypanthium infundibuliforme 5-7 mm. longum; petala ochroleuca.

A straggling shrub with stems up to 75 cm. long, the branches ascending-spreading, the bark pale gray, becoming somewhat shreddy; herbage not viscid; twigs, pedicels, hypanthium tube, and outer face of the calyx lobes whitish tomentose, without stipitate glands; leaves up to 15 mm. long and 3 mm. wide but usually shorter and narrower, mostly 1-veined and entire but occasionally with 1 or 2 subapical rounded teeth, oblanceolate, obtuse at apex, attenuate at base, the margin strongly revolute, thick, minutely and obscurely glandular-punctate, bright green and loosely arachnoid-pubescent over the whole upper surface, the lower surface densely and conspicuously white-lanate; pedicels 4 to 11 mm. long, nearly equaling to much longer than the hypanthium; hypanthium narrowly funnelform, attenuate at base, 5 to 7 mm. long, in anthesis about 3 mm. wide at summit; calyx lobes about 4 mm. long, broadly ovate, rounded at apex and sometimes obscurely apiculate, denticulate-ciliolate, spreading at anthesis, becoming reflexed; petals ochroleucous, about 10 mm. long and 6 mm. in greatest width, rounded and slightly erose (occasionally shallowly cleft) at apex, cuneate at base; stamens about 40, the filaments about 4 mm. long, the anthers 1.25 mm. long, nearly orbicular; pistils 3 to 7, the ovary short-stipitate, densely sericeous, the style 6 to 7 mm. long at anthesis, sericeous on the lower one-half to two-thirds, naked above; achenes about 6 mm. long, narrowly obpyramidal, glabrous except near the apex, the persistent style about 25 mm. long (perhaps longer at full maturity), silky-plumose with long antrorse hairs except the apical portion, this naked, 2 to 3 mm. long.

The type was collected about two miles west of Burro Creek crossing on the road from Wikieup to Hillside, southeastern Mohave County, Arizona, near the Yavapai County line, altitude

<sup>1</sup> Kearney, Thomas H., Peebles, Robert H., and collaborators. Flowering plants and ferns of Arizona. United States Department Agriculture Misc. Publ. 423: 405. 1942.

2,500 feet, April 18, 1941 (*Darrow & Benson 10891*). The species is known only from the type locality, where it had been collected first on April 20, 1938 (*Darrow & Crooks 3*). On both dates of collection, only a few late flowers persisted, but the fruit was not yet fully mature. Dr. Lyman Benson stated (personal communication): "The base of the plant is perhaps as much as one to one and one-half inches thick, but the trunk continues for only a few inches above ground." He also reported: "We found the plant growing in a rather limited area on disintegrated material of a peculiar white rock and associated with a vegetation entirely different from that on surrounding territory. However, although the distribution of the plant was restricted, it was locally abundant."

*Cowania subintegra* strikingly resembles *C. ericaefolia* Torr. of western Texas in habit, appearance, small stature, and very narrow, mostly entire leaves, but the Texas species has linear, sharply cuspidate leaves not more than 6 millimeters long, stipitate glands on the hypanthium (often also on the pedicels), and darker colored bark.

The flowers and fruit of *C. subintegra* apparently present no characters that are not within the range of variation of *C. Stansburiana* Torr., but that is a much larger and more erect shrub, attaining (exceptionally) a height of seven and one-half meters. The branchlets are more stiffly ascending, the bark reddish brown or dark gray, and the herbage usually very viscid. The leaves are much larger, cuneate-obovate in outline, pinnately veined and deeply 3-cleft with the terminal lobe in turn 3-toothed or 3-cleft, and they are nearly always conspicuously punctate with few large glands. With the single exception, so far as the writer knows, of the specimen noted in the next paragraph, the pedicels and hypanthium are beset with stipitate glands and are not tomentose, or but thinly so.

A collection from near Rye Creek, Gila County, Arizona (*Collom 97* in 1933), has the herbage non-viscid, the leaves minutely and inconspicuously punctate, and the pedicels and hypanthium densely pubescent and lacking stipitate glands. In these characters it resembles *C. subintegra* but in other respects it is not distinguishable from *C. Stansburiana*.

The writer believes that Jepson was justified in reducing *C. Stansburiana* to a variety of *C. mexicana* D. Don (*Man. Fl. Pl. Calif.* 498. 1925). The diagnostic characters given by Rydberg in his key and descriptions (*N. Am. Fl.* 22: 415, 416. 1913) are as follows:

*C. mexicana*: Hypanthium campanulate, abruptly contracted into the pedicel. Glands of the pedicel sessile and often hidden in the tomentum.

*C. Stansburiana*: Hypanthium funnellform, gradually contracted into the pedicel. Glands of the pedicel stalked.

Standley (*Contrib. U. S. Nat. Herb.* 23: 326. 1922) mentions also that the leaf lobes are entire in *C. mexicana*, whereas at least

the terminal lobe is cleft or dentate in *C. Stansburiana*, as was pointed out by Torrey in his original description (in Stansb. Expl. Great Salt Lake, 386. 1852). The color character of the bark given by Standley does not hold, many specimens of *C. Stansburiana* from Utah and northern Arizona having brown bark.

The manner in which the several characters are associated in specimens from Mexico and from the United States is shown in Table 1. It is evident that whereas in most of the specimens the

TABLE 1. Association of characters in specimens of *Cowania* in the United States National Herbarium that have been referred, respectively, to *C. mexicana* and *C. Stansburiana*.

| Species and collection                       | Primary leaf lobes |                  | Hypanthium                                 |                                | Stipitate glands on hypanthium, etc. |        |
|--|--------------------|------------------|--|--------------------------------|--------------------------------------|--------|
|  | Entire             | Toothed or cleft | Campanulate, ± abruptly contracted at base | Funnel-form, attenuate at base | Present                              | Absent |
| <i>C. mexicana</i>                           |                    |                  |  |                                |                                      |        |
| Rose 11659, Cusi-huiriacic, Chih. . .        | X                  |                  | X  |                                |                                      | X      |
| E. Palmer 12, Tepelhuanes, Dur. . . . .      | X                  |                  |  | X                              |                                      | X      |
| E. Palmer 71, Papsquiario, Dur. . . . .      | X                  |                  | X  |                                |                                      | X      |
| E. Palmer 4669, Papsquiario, Dur. . . . .    | X                  |                  | X  |                                |                                      | X      |
| Dugès in 1899, mountains, Guanajuato .       | X                  |                  | —  | —                              | —                                    | —      |
| <i>C. Stansburiana</i>                       |                    |                  |  |                                |                                      |        |
| Most specimens from Utah, Arizona, etc..     |                    | X                |  | X                              | X                                    |        |
| Hartman 276, Naçori, Son. . . . .            |                    | X                |  | X                              | X                                    |        |
| M. E. Jones 5586c, Provo, Utah . . . . .     |                    | X                | X  |                                | X                                    |        |
| V. Bailey 1457, near St. John's, Ariz. . . . |                    | X                | X  |                                | X                                    |        |
| Knowlton 238, Grand Canyon, Ariz. . . . .    |                    | X                | X  |                                | X                                    |        |
| Collom 97, Rye Creek, Ariz. . . . .          |                    | X                |  | X                              |                                      | X      |

characters considered by Rydberg and by Standley to be diagnostic of *C. mexicana* and *C. Stansburiana*, respectively, tend to be associated as indicated by them, there are several marked exceptions. Thus two of the five specimens referred to *C. mexicana* have the hypanthium funnellform or intermediate,<sup>2</sup> rather than

<sup>2</sup> D. Don, in his description of the genus *Cowania*, based solely upon *C. mexicana* (Trans. Linn. Soc. London 14: 575. 1825), states: "calyx [hypanthium] obturbinatus basi attenuata tubulosus." His illustration (Tab. XXII), however, shows the hypanthium as campanulate and abruptly contracted.

campanulate, and three specimens from Utah and Arizona that are *C. Stansburiana* in all other characters have a campanulate hypanthium that is abruptly contracted at base. One of the Mexican specimens (*Dugès* in 1899) that has the entire primary leaf lobes of *C. mexicana*, is intermediate in shape of the hypanthium and the latter is conspicuously glandular, although the glands are sessile or nearly so. The specimen from Rye Creek, Arizona, as was noted in a preceding paragraph, although conforming to the characterization of *C. Stansburiana* in shape of the leaves and of the hypanthium, lacks the stipitate glands. It is also aberrant in having the leaves obscurely and minutely punctate, not conspicuously and coarsely so, as in all other specimens of *C. Stansburiana* and in all specimens of *C. mexicana* examined by the writer.

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## FRANCESCO FRANCESCHI

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This paper is a brief account of the life and work of the man who stands out above all others in the history of horticulture in southern California—Dr. Emanuele Orazio Fenzi, known to his associates in this country in later life as Dr. Francesco Franceschi. In gathering data I drew upon a number of sources, and take this opportunity to express my appreciation to the following persons for the assistance they have given me: to Dr. Emily O. Lamb, who lived with the Fenzis at Santa Barbara as a member of the family for fourteen years, to Mr. Peter Riedel and to Mr. H. M. Butterfield, for much of the information contained in the following pages; to Mr. Butterfield, Miss Annetta Carter, and Mr. M. Van Rensselaer, for the loan of horticultural catalogues and journals—sources of much valuable data; to Dr. H. L. Mason, for placing at my disposal a collection of Franceschi's business correspondence (a fund of information of which I have scarcely scratched the surface), and to Dr. Howard S. Reed, for guiding my efforts in preparing this paper. Particularly informative also, were the following two articles: "Una gloria dell'orticoltura italiana. Il Dott. Emanuele Orazio Fenzi," by Mario Calvino—(*L'Agricoltura Coloniale*, 22: 122–128. 1928.) and "Dr. Fenzi's Contributions to American Horticulture," by F. W. Popenoe (*Journ. Hered.* 13: 215–220. 1922.).

Emanuele Orazio Fenzi was born March 12, 1843, in Florence, Italy. His grandfather was a very wealthy banker of that city and a senator, a man of an aggressive dominating personality. The Fenzi family were patrons of the arts and sciences, and followed the latest developments in these fields with great interest.